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Berkeley, California

Statistical Analysis of the Annual Average F.O.B. Prices of
Canned Apricots, 1926-27 to 1950-51

by

Sidney Hoos

July 1951

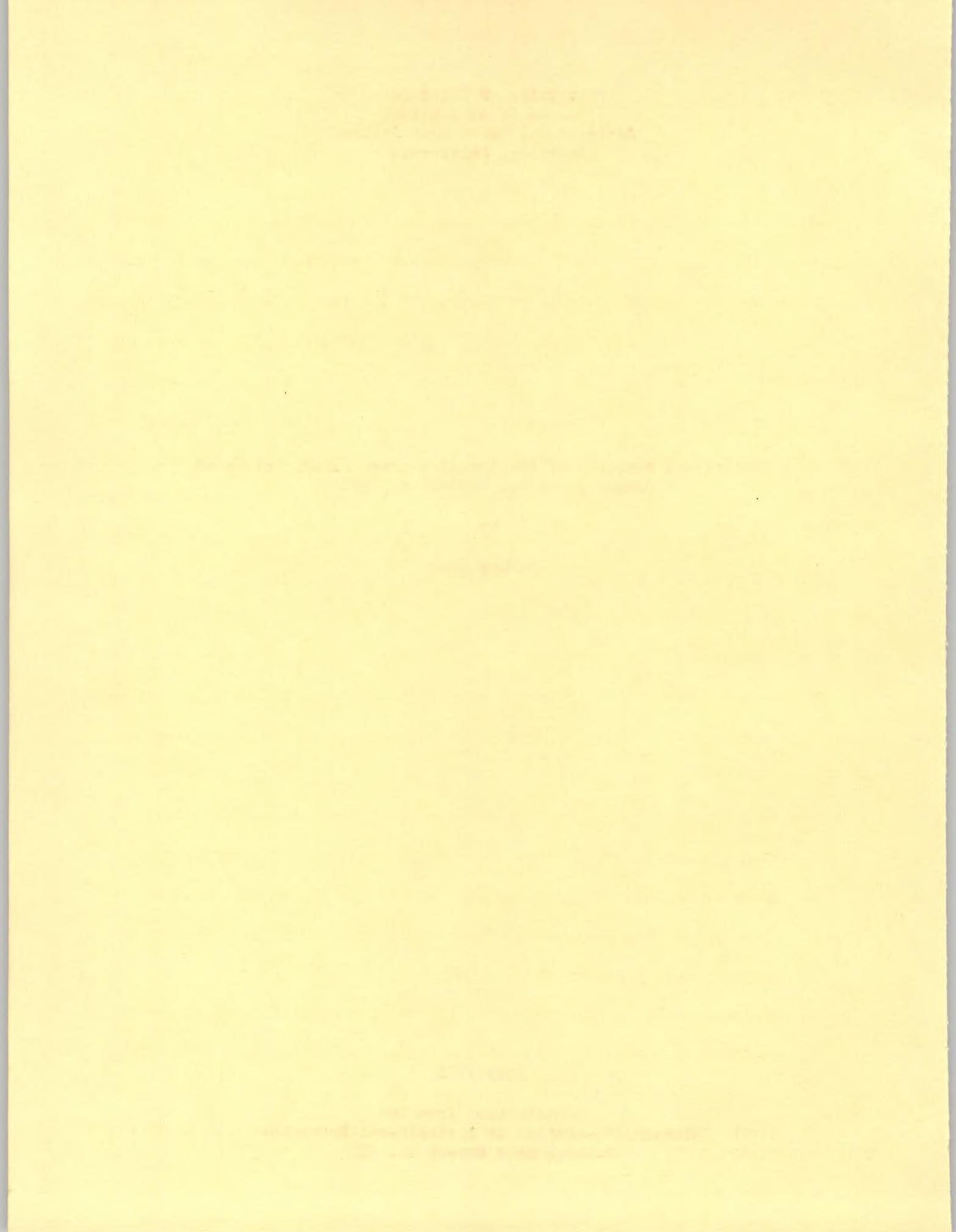
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Statistical Analysis of the Annual Average F.O.B. Prices of
Canned Apricots, 1926-27 to 1950-51

Sidney Hoos^{1/}

The purpose of this report is to present the results of a statistical analysis of the major factors which have influenced the annual average f.o.b. prices received for canned apricots by canners in California from 1926-27 through 1950-51. The years 1941-42 through 1946-47 were excluded from the analysis because of the abnormal conditions which prevailed during the war years, such as federal price control, and in 1946-47 when a large proportion of canner shipments went into the refilling of the supply pipe line rather than into consumers' hands.

In this analysis the average relationships which prevailed between the f.o.b. prices of canned apricots and three factors were measured. These three factors are (1) total domestic shipments of California canned apricots; (2) index of non-agricultural income payments in the United States; and (3) adjusted index of prices of competing canned fruits.

The average relations which have prevailed between the f.o.b. price and each of the independent variables, for the period considered, may be summarized as follows:

- (a) A change of one million cases in domestic shipments of California canned apricots, with nonagricultural income and with competing canned fruit prices held constant, was on the average accompanied by a change in the opposite direction of about 40 cents a case in the f.o.b. price of canned apricots.
- (b) An increase of 10 per cent in the index of nonagricultural income in the United States, with domestic shipments of California canned

^{1/} Professor of Agricultural Economics, Agricultural Economist in the Experiment Station and on the Giannini Foundation.

To add to H.O.T. evidence I am not able to give you information
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apricots and with prices of competing canned fruits held constant, was on the average accompanied by an increase of about 32 cents a case in the f.o.b. price of California canned apricots.

- (c) An increase of 10 per cent in the adjusted index of prices of competing canned fruits, with domestic shipments of California canned apricots and with nonagricultural income held constant, was on the average accompanied by an increase of about 29 cents a case in the f.o.b. price of California canned apricots.

Differences between the actual prices and those explained by the statistical analysis are given in table 4, column 3.

The f.o.b. prices of canned apricots used in the report are industry average prices; they are based on records of canners and reflect actual operations of the canneries packing apricots in California.

The domestic movement of canned apricots from California canners has been derived from statistics issued by the Canners League of California; the total movement from canneries has been adjusted for exports to derive the movement to the domestic market.

The index of United States nonagricultural income is based on reports issued by the United States Department of Commerce. At the time the analysis was made, nonagricultural income figures for the 1949-50 season were available only through April, 1951. Hence, for the nonagricultural income figure used for the 1950-51 marketing year in the analysis, it has been necessary to estimate the value for May, 1951; it has been estimated at the value of April, 1951.

The level of competing canned fruit prices has been measured by an index constructed in the same manner as in the previous reports on canned apricots; the construction of the index is explained in some detail in table 3 appended to this report. Here, it may be noted that the f.o.b. prices of canned Bartlett pears are based on reports from California and Northwest canneries and reflect

actual operations of Pacific Coast canneries packing Bartlett pears. The f.o.b. prices of canned clingstone peaches are based on reports from California canners and also reflect actual operations of the packers. The prices for canned Bartlett pears and canned apricots were compiled by the Canners League of California, and the prices of canned clingstone peaches were compiled by the Cling Peach Advisory Board. The prices of canned Hawaiian pineapple are based on published quotations supplemented by available trade information.

Specific sources for the several series of data used in the analysis, and more detailed specifications, are noted in the explanatory footnotes to tables 1, 2, and 3 appended to this report.

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TABLE 1

Statistical Analysis of Annual Average F.O.B.
Prices of California Canned Apricots
Variables Used in the Analyses
(1926-27 Through 1950-51, Excluding 1940-41 Through 1946-47)

Year, June through May	F.o.b. price canned apricots	Domestic shipments of canned apricots	Index of United States nonagricultural income	Adjusted index
				1
				dollars per case
1926-27	3.85	2,038	115.3	120.0
1927-28	3.97	1,779	116.2	108.7
1928-29	3.67	2,195	120.7	104.7
1929-30	3.97	2,259	120.2	124.0
1930-31	3.32	2,183	104.4	108.0
1931-32	2.64	1,541	85.5	108.4
1932-33	2.23	1,521	68.1	118.9
1933-34	2.37	2,034	75.5	123.3
1934-35	3.47	1,477	82.1	124.8
1935-36	2.93	1,951	91.0	108.1
1936-37	2.75	2,992	106.5	94.9
1937-38	3.02	2,901	103.3	106.0
1938-39	2.55	2,562	101.0	90.8
1939-40	2.77	2,640	109.6	90.5
1947-48	5.20	2,415	285.9	64.5
1948-49	4.55	3,528	304.7	64.4
1949-50	4.11	3,072	305.2	52.9
1950-51 ^{b/}	4.83	3,572	346.5	56.1

a/ No. $2\frac{1}{2}$ can basis.

b/ Preliminary, subject to revision.

Sources:

Col. 1: Compiled from reports by cannery. Prices are weighted average f.o.b. prices received by cannery, for all grades and sizes of cans, on an unadvertised basis.

Col. 2: Column 7, table 2.

Col. 3: Simple average of the pack-year monthly indices of national nonagricultural income, 1935-1939 average equals 100. Monthly income data compiled from U. S. Department of Commerce, Survey of Current Business. Index for May 1951 estimated at a level of April 1951.

Col. 4: For sources and method of construction, see table 3.

1824

Geographical variations of annual yields across 8 places of California's San Joaquin Valley

Books of Various Authors

Easy fact edit at least before publication

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Copy 16: Comptroller's copy of the memorandum dated January 12, 1942, from the Director of Civil Defense to the Director of War Mobilization, concerning the proposed revision of the Civil Defense Act.

City, State: Columbia, S.C., September 25.

Copy is for source and author of compilation, see table 3.

TABLE 2

California Canned Apricots: Pack, Carry-Over and Shipments

Year, June through May	Pack	Carry-over	Available for shipment	Carry-over	Total shipments	Exports	Domestic shipments
		from preceding year		into following year			
		1		2			
1,000 cases (24 - No. $2\frac{1}{2}$ basis)							
1926-27	3,227	21	3,248	401	2,847	809	2,038
1927-28	2,960	401	3,361	952	2,409	630	1,779
1928-29	1,991	952	2,943	154	2,789	594	2,195
1929-30	4,023	154	4,177	1,189	2,988	729	2,259
1930-31	1,954	1,189	3,143	546	2,597	414	2,183
1931-32	2,006	546	2,552	515	2,037	496	1,541
1932-33	1,805	515	2,320	323	1,997	476	1,521
1933-34	2,416	323	2,739	167	2,572	538	2,034
1934-35	1,774	167	1,941	227	1,714	237	1,477
1935-36	3,164	227	3,391	844	2,547	596	1,951
1936-37	2,899	844	3,743	228	3,515	523	2,992
1937-38	5,553	228	5,781	2,305	3,476	575	2,901
1938-39	1,547	2,305	3,852	528	3,324	762	2,562
1939-40	3,338	528	3,866	479	3,387	747	2,640
1947-48	3,063	279	3,342	639	2,703	288	2,415
1948-49	4,651	639	5,290	1,508	3,782	254	3,528
1949-50	2,307	1,508	3,815	532	3,283	211	3,072
1950-51 ^{a/}	3,661	532	4,193	115	4,078	129	3,572 ^{b/}

a/ Preliminary, subject to revision.

b/ Excludes United States government (Quartermaster) purchases of 375,564 cases; if government purchases were included, total domestic shipments would be 3,948,000 cases.

Sources:

Cols. 1 through 5: Compiled by Canners League of California.

Col. 6: U. S. Department of Commerce, Monthly Summary of Foreign Commerce (April-May 1951 estimated) converted at 45 pounds per case of 24 No. $2\frac{1}{2}$ cans.

Col. 7: Column 5 minus column 6.

S. L. KAT



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including 100 cases
of 100 cases

Cost of shipping & combining per case
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Cost of shipping & combining per case

Cost of shipping & combining per case

TABLE 3

Construction of Index Prices of Canned Fruits Competing with Canned Apricots

Year, June through May	Prices			Relatives of prices			Unadjusted index of prices of compet- ing canned fruits	Index of United States nonagricultural income	Adjusted in- dex of prices of competing canned fruits
	Canned clingstone peaches	Canned Bartlett pears	Canned Hawaiian pineapple	Canned clingstone peaches	Canned Bartlett pears	Canned Hawaiian pineapple			
	1	2	3	4	5	6	7	8	9
	dollars per case						1935-1939 = 100		
1926-27	3.66	4.31	4.70	142.2	144.1	130.6	138.4	115.3	120.0
1927-28	3.17	4.60	4.20	123.2	153.8	116.7	126.3	116.2	108.7
1928-29	3.22	4.13	4.40	125.1	138.1	122.2	126.4	120.7	104.7
1929-30	4.08	4.82	4.70	158.5	161.2	130.6	149.1	120.2	124.0
1930-31	2.88	3.53	4.00	111.9	118.1	111.1	112.7	104.4	108.0
1931-32	2.55	2.82	3.00	99.1	94.3	83.3	92.7	85.5	108.4
1932-33	1.97	2.48	3.10	76.5	82.9	86.1	81.0	68.1	118.9
1933-34	2.31	2.64	3.60	89.7	88.3	100.0	93.1	75.5	123.3
1934-35	2.69	3.05	3.60	104.5	102.0	100.0	102.5	82.1	124.8
1935-36	2.51	2.92	3.60	97.5	97.7	100.0	98.4	91.0	108.1
1936-37	2.66	2.92	3.60	103.3	97.7	100.0	101.1	106.5	94.9
1937-38	2.96	3.07	3.80	115.0	102.7	105.6	109.5	103.3	106.0
1938-39	2.30	2.77	3.40	89.4	92.6	94.4	91.7	101.0	90.8
1939-40	2.44	3.27	3.60	94.8	109.4	100.0	99.2	109.6	90.5
1947-48	4.70	7.07	5.80	182.6	236.5	161.1	184.5	285.9	64.5
1948-49	4.86	7.37	6.50	188.8	246.5	180.6	196.1	304.7	64.4
1949-50	3.94	5.15	6.00	153.1	172.2	166.7	161.3	305.2	52.9
1950-51 ^{a/}	4.98	6.90	6.40	193.5	230.8	177.8	194.5	346.5	56.1

^{a/} Preliminary, subject to revision.

Sources:

Cols. 1 and 2: Compiled from reports by canners. Prices are weighted average f.o.b. prices for all grades and sizes of cans, on an unadvertised basis. Canned clingstone peach prices are for California; and canned Bartlett pear prices are for the Pacific Coast, except 1947-48 is for California.

(Continued on next page.)

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Table 3 continued.

- Col. 3: Prices are for No. $2\frac{1}{2}$ sliced fancy pineapple, f.o.b. Hawaiian, from published quotations supplemented by trade information.
- Cols. 4, 5, and 6: Prices given in columns 1, 2, and 3, respectively, in per cent of their 1935-1939 averages--canned clingstone peaches, \$2.574; canned Bartlett pears, \$2.990; canned pineapples, \$3.60.
- Col. 7: Weighted combination of relatives in columns 4, 5, and 6 using the following weights--canned clingstone peaches, 8; canned Bartlett pears, 3; canned pineapples, 6.
- Col. 8: From table 1, column 3.
- Col. 9: Column 7 divided by column 8.

Cognit. & stratag. p. cognit. &c.

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TABLE 4

Actual and Estimated F.O.B. Prices of California Canned Apricots
 (1926-27 Through 1950-51, Excluding 1940-41 through 1946-47)

Year, June through May	Actual price	Estimated price	Difference:	Column 3
			column 1 minus column 2	as per cent of column 1
	1	2	3	4
dollars per case				
1926-27	3.85	3.97	-0.12	- 3.1
1927-28	3.97	3.80	0.17	4.3
1928-29	3.67	3.65	0.02	0.5
1929-30	3.97	4.12	-0.15	- 3.8
1930-31	3.32	3.26	0.06	1.8
1931-32	2.64	2.86	-0.22	- 8.3
1932-33	2.23	2.39	-0.16	- 7.2
1933-34	2.37	2.63	-0.26	-11.0
1934-35	3.47	3.17	0.30	8.6
1935-36	2.93	2.90	0.03	1.0
1936-37	2.75	2.61	0.14	5.1
1937-38	3.02	2.88	0.14	4.6
1938-39	2.55	2.47	0.08	3.1
1939-40	2.77	2.70	0.07	2.5
1947-48	5.20	4.98	0.22	4.2
1948-49	4.55	4.74	-0.19	- 4.2
1949-50	4.11	4.34	-0.23	- 5.6
1950-51 ^{a/}	4.83	4.74	0.09	1.9

a/ Preliminary.

Sources:

- Col. 1: From table 1, column 1.
- Col. 2: Estimated by equation 2, table 5.
- Col. 3: Column 1 minus column 2.
- Col. 4: Column 3 as per cent of column 1.

J. SIEGMUND

1945-1946, Executive Board of California's San Joaquin
County, B.O.T. (Baptist Organization of the County).

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TABLE 5

Statistical Analyses of Factors Affecting Annual Average F.O.B. Prices
of California Canned Apricots, 1926-27 to 1950-51

Equation number	Multiple regression equations				\bar{R} Adjusted coefficient of multiple correlation	
	Dependent variable	Constant term	Independent variables and their net regression coefficients (figures in parentheses are t-ratios and in brackets are beta coefficients)			
1	X_1	-13.296706	$-0.373000X_2$ (2.611361) [0.276635]	$+ 6.998013 \log_{10}X_3$ (11.851392) [1.799743]	$+ 0.029628X_4$ (4.989699) [0.809962]	0.964
2	X_1	-25.552064	$-.401000X_2$ (3.562675) [0.297282]	$+ 7.702165 \log_{10}X_3$ (14.410997) [1.980837]	$+ 6.952885 \log_{10}X_4$ (6.760533) [0.970795]	0.977
3	X_1	-23.169750	$-1.985904 \log_{10}X_2$ (3.319810) [0.270757]	$+ 7.701868 \log_{10}X_3$ (13.939349) [1.980760]	$+ 7.160005 \log_{10}X_4$ (6.834636) [0.999714]	0.975
4	$\log_{10}X_1$	-2.853860	$-0.208832 \log_{10}X_2$ (2.332088) [0.227724]	$+ 0.991693 \log_{10}X_3$ (11.990025) [2.039878]	$+ 1.008368 \log_{10}X_4$ (6.430054) [1.126088]	0.964

X_1 = annual average f.o.b. price of California canned apricots (in dollars per case);

X_2 = domestic shipments of California canned apricots (in units of 1,000,000 cases);

X_3 = index of United States nonagricultural income (1935-1939=100);

X_4 = adjusted index of prices of competing canned fruits (1935-1939=100).

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$X^3 = \text{Index of Purified Gratuity Income} = \frac{(TBD-TED)}{100}$!

$x^5 =$ (several 0's, 1, or several 5's) score 5 bonus points if correct.

19-2021 to 19-2022 "Census by population" is
B.O.A. & S.S.T.S.V.A. TANZANIA GOVERNMENT STATISTICS